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IS 3985 (1983): Leather for rugby ball [CHD 17: Leather, Tanning Materials and Allied Products]



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**SPECIFICATION FOR
LEATHER FOR RUGBY BALL**

(*First Revision*)

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BUREAU OF INDIAN STANDARDS
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG
NEW DELHI 110002

Indian Standard

SPECIFICATION FOR LEATHER FOR RUGBY BALL

(*First Revision*)

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Indian Standard
SPECIFICATION FOR
LEATHER FOR RUGBY BALL
(*First Revision*)

0. FOREWORD

0.1 This Indian Standard (First Revision) was adopted by the Indian Standards Institution on 30 March 1983, after the draft finalized by the Leather Sectional Committee had been approved by the Chemical Division Council.

0.2 This standard was first published in 1966, at the request of the Sports Goods Sectional Committee. The standard is expected to assist the tanners to offer a suitable leather to the sports goods industry and to help the sports Goods Export Promotion Council and various quality marking schemes of State Departments in selecting a material of choice, controlled by the conditions of national sports or the export market needs.

0.3 This standard has been revised, in light of the technological developments since the publication of its earlier version and the availability of authentic test data on indigenous samples tested at the Central Leather Research Institute. In this revision, in addition to the existing chrome tanned rugby ball leather, semi-chrome tanned and vegetable tanned leathers have been included. The requirement for double hole stitch tear strength has been suitably modified and some additional chemical requirements have been prescribed. IS : 5868-1969* and IS : 6191-1971† have been suitably referred and the consequential changes have been carried out in this standard.

0.4 For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS : 2-1960‡. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

*Method of sampling for leather.

†Methods of micro-biological, colour fastness and microscopical tests for leather.

‡Rules for rounding off numerical values (*revised*).

IS : 3985 - 1983

1. SCOPE

1.1 This standard prescribes the requirements, methods of sampling and test for rugby ball leather.

2. TERMINOLOGY

2.1 For the purpose of this standard, the definition given in IS: 1640-1960* shall apply.

3. TYPES

3.1 This standard covers following three types of leather for rugby ball:

- a) *Type 1* — Chrome tanned (CT),
- b) *Type 2* — Semi-chrome tanned (SCT), and
- c) *Type 3* — Vegetable tanned (VT).

4. REQUIREMENTS

4.1 Raw Material — The raw material shall be heavy cowhides.

4.2 Tanning — Leather, Type 1, shall be tanned with basic chromium salts; leather, Type 2 with vegetable tanning material followed by basic chromium salts; and leather, Type 3 with vegetable tanning material respectively.

4.3 Fungicide Additives — At the end of tanning operation and before drying, suitable fungicides shall be incorporated into the leather.

4.3.1 Fungicides, used to promote resistance to fungi growth in the leather shall be effective and non-toxic. Their optimum dosage is required to be determined in accordance with LB : 3 of IS : 6191-1971†.

4.3.2 Resistance to Mould-Growth — The material shall show no growth of mildew when examined visually after the completion of the test prescribed in LB : 2 of IS : 6191-1971†.

4.4 Finishing — The tanned leather shall be substantially fat liquored and grain finished smoothly. It may be dyed in any colour as agreed to between the supplier and the purchaser.

4.5 Chemical Requirements — The material shall comply with the chemical requirements as given in Table 1.

*Glossary of terms relating to hides, skins and leather.

†Methods of micro-biological, colour fastness and microscopical tests for leather.

TABLE 1 CHEMICAL REQUIREMENTS FOR LEATHER FOR RUGBY BALL
(Clause 4.5)

SL No.	CHARACTERISTIC	REQUIREMENT			METHOD OF TEST REF TO CL NO. IN IS : 582-1970*
		Type 1	Type 2	Type 3	
(1)	(2)	(3)	(4)	(5)	(6)
i)	Solvent extractable substance, percent by mass, <i>Min</i>	8.0 to 12.0	8.0 to 12.0	8.0 to 12.0	LC : 4
ii)	Total ash, percent by mass, <i>Max</i>	4.0	2.0	1.5	LC : 3
iii)	Chromium content (as $\text{Cr}_2(\text{O})_3$), percent by mass, <i>Min</i>	3.0	1.0	—	LC : 10
iv)	Degree of tannage, <i>Min</i>	—	-	50	LC : 21
v)	Water soluble matter, percent by mass, <i>Max</i>	—	4	7	LC : 6
vi)	Bound organic substances, percent by mass,	10 to 15	20 to 30	25 to 40	LC : 21
vii)	pH of water solubles, <i>Min</i>	3.5	3.5	3.5	LC : 18

NOTE — All requirements shall be calculated on zero percent Volatile Matter basis, except pH of water solubles. Volatile matter shall be determined as prescribed in LC : 10 of IS : 582-1970*.

*Methods of chemical testing of leather (*first revision*).

4.6 Physical Requirements — The material shall comply with the physical requirements as given in Table 2.

5. MARKING AND PACKING

5.1 Marking — The leather pieces and packages shall be marked with area in dm^2 ; the name of the manufacturer; recognized trade-mark, if any; type; month and year of manufacture.

5.2 The product may also be marked with Standard mark.

5.2.1 The use of the Standard Mark is governed by the provisions of the *Bureau of Indian Standards Act, 1986* and the Rules and Regulations made thereunder. The details of conditions under which the licence for the use of Standard Mark may be granted to manufacturers or producers may be obtained from the Bureau of Indian Standards.

TABLE 2 PHYSICAL REQUIREMENTS FOR LEATHER FOR RUGBY BALL
(Clause 4.6)

SL No.	CHARACTERISTIC	REQUIREMENT			METHOD OF TEST, REF TO CL NO. IN IS: 5914-1970*
		Type 1	Type 2	Type 3	
(1)	(2)	(3)	(4)	(5)	(6)
i)	Thickness, mm, <i>Min</i>	2.3	2.3	2.3	LP : 2
ii)	Water absorption, per- cent by mass, <i>Max</i>				LP : 12
	a) in 1/2 hour	60.0	60.0	60.0	
	b) in 2 hour	65.0	65.0	65.0	
	c) in 24 hour	85.0	85.0	85.0	
iii)	Tensile strength, MPa (kg/cm ²), <i>Min</i>	20.5 (205.0)	20.5 (205.0)	20.5 (205.0)	LP : 6
iv)	Elongating at break, percent, <i>Max</i>	55.0	55.0	50.0	LP : 6
v)	Stitch tear (double hole) strength, kg/cm	100	100	100	LP : 8

1 kgf/cm² = 98 066.5 N/m² and 1 MPa = 10⁶ N/m².

*Methods of physical testing of leather.

6. SAMPLING AND CRITERIA FOR CONFORMITY

6.1 The scale of sampling and criteria for conformity of the material shall be as prescribed in IS : 5868-1969*.

*Method of sampling for leather.

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